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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/544,274	04/06/2000	Joseph Mulavelil George	AUS000185US1	7599

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EXAMINER
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ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2002* .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   Claims 1-48 are pending in this application.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States
> before the invention by the applicant for patent, except that an international application filed under the
> treaty defined in section 351(a) shall have the effect under this subsection of a national application
> published under section 122(b) only if the international application designating the United States was
> published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the
> invention by the applicant for patent, except that a patent shall not be deemed filed in the United
> States for the purposes of this subsection based on the filing of an international application filed under
> the treaty defined in section 351(a).

3.   Claims 1-4, 7, 12-15, 17, 20-21, 24, 27-28, 35-36, 43-44 and 46 are rejected

under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,456,995 issued to Salo

et al. (herein Salo).

With respect to claim 1, Salo discloses determining a structure of the relational

database (col. 4, lines 49-57 and fig. 1, item 100); determining a delete action based on

the structure of the relational database (col. 7, lines 60-67 and col. 8, lines 1-3);

generating database modification commands based on the determined delete action

(col. 6, lines 60-67, col. 7, lines 1-4, also col. 8, lines 41-51, see fig. 4 and fig. 6); and

sending the database modification commands to a relational database server, wherein

the relational database server deletes the object data from the relational database

based on the database modification commands (col. 6, lines 26-41 and col. 7, lines 9-17).

With respect to claims 2-4 and 7, Salo discloses wherein determining the structure of the relational database includes invoking a database meta-information class object associated with the relational database (col. 4, lines 45-67 and col. 7, lines 9-67); wherein the database meta-information class object encapsulates a dependency structure of the relational database (col. 6, lines 42-64); and wherein the database meta-information class object further includes a delete action identifier for each dependent table of a plurality of tables in the relational database (col. 5, lines 44-55); wherein the database meta-information class object is generated based on a file describing the structure and delete actions for tables in the relational database (col. 5, lines 44-55).

Claim 12 is essentially the same as claim 1 except that it is directed to a system rather than a method (col. 4, lines 49-57 and fig. 1, item 100; col. 7, lines 60-67 and col. 8, lines 1-3; col. 6, lines 60-67, col. 7, lines 1-4, also col. 8, lines 41-51, see fig. 4 and fig. 6; col. 6, lines 26-41 and col. 7, lines 9-17), and is rejected for the same reason as applied to the claim 1 hereinabove.

Claims 13-15 and 17 are essentially the same as claims 2-4 and 7 except that they are directed to a system rather than a method (col. 4, lines 45-67 and col. 7, lines 9-67; col. 6, lines 42-64; and col. 5, lines 44-55), and are rejected for the same reason as applied to the claims 2-4 and 7 hereinabove.

With respect to claim 20, Salo discloses determining a structure of the relational database; determining one or more delete actions based on the structure of the relational database; and generating the class object based on the determined structure and the determined one or more delete actions (col. 4, lines 49-57 and fig. 1, item 100; col. 7, lines 60-67 and col. 8, lines 1-3; col. 6, lines 60-67, col. 7, lines 1-4, also col. 8, lines 41-51, see fig. 4 and fig. 6; col. 6, lines 26-41 and col. 7, lines 9-17).

With respect to claim 21, Salo discloses wherein generating the class object includes encapsulating information identifying the structure of the relational database and the one or more delete actions (col. 4, lines 45-67, col. 6, lines 42-64 and col. 7, lines 9-67).

With respect to claim 24, Salo discloses wherein the structure of the relational database and the one or more delete actions are determined from a file describing the structure and delete actions for tables in the relational database (col. 5, lines 44-55).

Claim 27 is essentially the same as claim 20 except that it is directed to a system rather than a method (col. 4, lines 49-57 and fig. 1, item 100; col. 7, lines 60-67 and col. 8, lines 1-3; col. 6, lines 60-67, col. 7, lines 1-4, also col. 8, lines 41-51, see fig. 4 and fig. 6; col. 6, lines 26-41 and col. 7, lines 9-17), and is rejected for the same reason as applied to the claim 20 hereinabove.

Claim 28 is essentially the same as claim 21 except that it is directed to a system rather than a method (col. 4, lines 45-67, col. 6, lines 42-64 and col. 7, lines 9-67), and is rejected for the same reason as applied to the claim 21 hereinabove.

Claim 35 is essentially the same as claim 20 except that it is directed to a computer product rather than a method (col. 4, lines 49-57 and fig. 1, item 100; col. 7, lines 60-67 and col. 8, lines 1-3; col. 6, lines 60-67, col. 7, lines 1-4, also col. 8, lines 41-51, see fig. 4 and fig. 6; col. 6, lines 26-41 and col. 7, lines 9-17), and is rejected for the same reason as applied to the claim 20 hereinabove.

Claim 36 is essentially the same as claim 21 except that it is directed to a computer product rather than a method (col. 4, lines 45-67, col. 6, lines 42-64 and col. 7, lines 9-67), and is rejected for the same reason as applied to the claim 21 hereinabove.

With respect to claim 43, Salo discloses a meta-information class for determining a structure of the relational database and one or more delete actions based on the structure of the relational database; and a database meta-information generator class for generating the class object based on the determined structure and the determined one or more delete actions (col. 4, lines 49-57 and fig. 1, item 100; col. 7, lines 60-67 and col. 8, lines 1-3; col. 6, lines 60-67, col. 7, lines 1-4, also col. 8, lines 41-51, see fig. 4 and fig. 6; col. 6, lines 26-41 and col. 7, lines 9-17).

With respect to claim 44, Salo discloses wherein the database meta-information generator class encapsulates information identifying the structure of the relational database and the one or more delete actions into the class object (col. 4, lines 45-67, col. 6, lines 42-64 and col. 7, lines 9-67).

With respect to claim 46, Salo determining a structure of the relational database; determining one or more default delete actions based on the structure of the relational

database; receiving user input to modify the one or more default delete actions; and

generating the class object based on the determined structure, the determined one or

more delete actions and the user input (col. 4, lines 49-57 and fig. 1, item 100; col. 7,

lines 60-67 and col. 8, lines 1-3; col. 6, lines 60-67, col. 7, lines 1-4, also col. 8, lines 41-

51, see fig. 4 and fig. 6; col. 6, lines 26-41 and col. 7, lines 9-17).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 5-6, 9-11, 16, 18-19, 22-23, 25-26, 29-31, 33-34, 37-39, 41-42, 45 and

47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No.

6,456,995 issued to Salo et al. (herein Salo) in view of US Patent No. 4,947,320 issued

to Crus et al. (hereinafter Crus).

With respect to claims 5-6, Salo discloses a method of deleting object data from

a relational database as discussed in claim 1.

Salo does not explicitly indicate, "; wherein the delete action identifier is one of

cascade delete and nullify columns delete and wherein the delete action is one of

cascade delete and nullify columns delete."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete as claimed (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Crus so as to obtain a method of deleting object data from a relational database. This combination would provide an improved method for enforcing referential constraints. The method is useful in any database management system in which records of data are manipulated in response to operations, which may affect multiple records (Crus – col. 3, lines 4-15) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claims 9-11, Salo discloses a method of deleting object data from a relational database as discussed in claim 1.

Salo does not explicitly indicate, " wherein the file is further generated based on user input to override default delete action identifiers in the file and wherein the file is further generated based on user input to insert one or more delete constraints in the file for one or more of the tables in the relational database; and commands are SQL statements."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete and delete constraints as claimed (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines

60-67, col. 17, lines 1-67 and col. 18, lines 1-18); and SQL statements (col. 5, lines 24-28).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Crus so as to obtain a method of deleting object data from a relational database. This combination would provide an improved method for enforcing referential constraints. The method is useful in any database management system in which records of data are manipulated in response to operations, which may affect multiple records (Crus – col. 3, lines 4-15) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claim 16 is essentially the same as claim 5 except that it is directed to a system rather than a method (col. 5, lines 3-67 and col. 6, lines 1-36), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claims 18-19 are essentially the same as claims 9-10 except that they are directed to a system rather than a method (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 9-10 hereinabove.

With respect to claims 22-23, Salo discloses a method of deleting object data from a relational database as discussed in claim 20.

Salo does not explicitly indicate, "; wherein the delete action identifier is one of cascade delete and nullify columns delete and wherein the delete action is one of cascade delete and nullify columns delete."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete as claimed (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Crus so as to obtain a method of deleting object data from a relational database. This combination would provide an improved method for enforcing referential constraints. The method is useful in any database management system in which records of data are manipulated in response to operations, which may affect multiple records (Crus – col. 3, lines 4-15) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claims 25-26, Salo discloses a method of deleting object data from a relational database as discussed in claim 20.

Salo does not explicitly indicate, " wherein the file is further generated based on user input to override default delete action identifiers in the file and wherein the file is further generated based on user input to insert one or more delete constraints in the file."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete and delete constraints as claimed (abstract,

col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Crus so as to obtain a method of deleting object data from a relational database. This combination would provide an improved method for enforcing referential constraints. The method is useful in any database management system in which records of data are manipulated in response to operations, which may affect multiple records (Crus – col. 3, lines 4-15) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claims 29-30 are essentially the same as claims 22-23 except that it is directed to a system rather than a method (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 22-23 hereinabove.

With respect to claim 31, Salo discloses wherein the means for determining the structure of the relational database and the means for determining the one or more delete actions determine the structure and one or more delete actions from a file describing the structure and delete actions of tables in the relational database (col. 5, lines 45-55).

Claims 33-34 are essentially the same as claims 25-26 except that it is directed to a system rather than a method (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5,

lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 25-26 hereinabove.

Claims 37-38 are essentially the same as claims 22-23 except that it is directed to a computer program product rather than a method (col. 5, lines 3-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 22-23 hereinabove.

With respect to claim 39, Salo discloses wherein the means for determining the structure of the relational database and the means for determining the one or more delete actions determine the structure and one or more delete actions from a file describing the structure and delete actions of tables in the relational database (col. 5, lines 45-55).

Claims 41-42 are essentially the same as claims 25-26 except that it is directed to a computer program product rather than a method (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18), and is rejected for the same reason as applied to the claims 25-26 hereinabove.

With respect to claim 45, Salo discloses a method of deleting object data from a relational database as discussed in claim 43.

Salo does not explicitly indicate, "; wherein one or more delete actions is at least one of cascade delete and nullify columns delete."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete as claimed (col. 5, lines 3-67 and col. 6, lines 1-36).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Crus so as to obtain a method of deleting object data from a relational database. This combination would provide an improved method for enforcing referential constraints. The method is useful in any database management system in which records of data are manipulated in response to operations, which may affect multiple records (Crus – col. 3, lines 4-15) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claims 47-48, Salo discloses a method of deleting object data from a relational database as discussed in claim 46.

Salo does not explicitly indicate, " wherein the file is further generated based on user input to override default delete action identifiers in the file and wherein the file is further generated based on user input to insert one or more delete constraints in the file for one or more of the tables in the relational database."

However, Crus discloses delete action identifier such as cascade delete, delete set null as well as nullity columns delete and delete constraints as claimed (abstract, col. 1, lines 62-67, col. 2, lines 1-61, col. 5, lines 1-67, col. 6, lines 1-36, col. 16, lines 60-67, col. 17, lines 1-67 and col. 18, lines 1-18).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Crus so as to obtain a method of deleting object data from a relational database. This combination would provide an improved method for enforcing referential constraints. The method is useful in any database management system in which records of data are manipulated in response to operations, which may affect multiple records (Crus – col. 3, lines 4-15) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

6.   Claims 8, 32 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,456,995 issued to Salo et al. (herein Salo) in view of US Patent No. 6,199,195 issued to Goodwin et al. (herein Goodwin).

With respect to claim 8, Salo discloses a method of deleting object data from a relational database as discussed in claim 1.

Salo does not explicitly indicate, "and wherein the file is an Extended Markup Language file."

However, Goodwin discloses a kind of XML such as UML as claimed (col. 4, lines 22-30, col. 6, lines 37-51, see fig. 3, and col. 8, lines 42-62).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Goodwin so as to obtain a method of deleting object data from a relational database.

This combination would provide the method allowing users to generate objects by composing services based on the templates into objects that support the composed behaviors and methods (Goodwin – col. 6, lines 37-44) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

With respect to claim 32, Salo discloses an apparatus for generating a class object as discussed in claim 27.

Salo does not explicitly indicate, "further comprising means for generating the file, wherein the file is generated based on Java Database Connectivity (JDBC) database metadata associated with the relational database."

However, Goodwin discloses JDBC as claimed (col. 1, lines 60-67 and col. 2, lines 21-56).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Salo with the teachings of Goodwin so as to obtain a method of deleting object data from a relational database. This combination would provide the method allowing users to generate objects by composing services based on the templates into objects that support the composed behaviors and methods (Goodwin – col. 6, lines 37-44) in the deletion of object from an object-relational system in a customizable and database independent manner environment.

Claim 40 is essentially the same as claim 32 except that it is directed to a computer product rather than an apparatus (col. 1, lines 60-67 and col. 2, lines 21-56), and is rejected for the same reason as applied to the claim 32 hereinabove.

Contact Information

7.   Any inquiry concerning this communication should be directed to Anh Ly whose

telephone number is (703) 306-4527 or via E-Mail: **ANH.LY@USPTO.GOV**. The

examiner can be reached on Monday - Friday from 8:00 AM to 4:00 PM.

If attempts to reach the examiner are unsuccessful, see the examiner's

supervisor, Kim Vu, can be reached on (703) 305-4393.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 746-7238 (after Final Communication)

or: (703) 746-7239 (for formal communications intended for entry)

or: (703) 746-7240 (for informal or draft communications, or Customer Service

Center, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal

Drive, Arlington, VA, Fourth Floor (receptionist).

Inquiries of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone number is (703) 305-3900.

AL/A
Oct. 31, 2002.

HOSAIN T. ALAM
PRIMARY EXAMINER